## P.T.O. DRIVESHAFT

The LBX331 baler is equipped with a BONDIOLI p.t.o. drive shaft. The LBX421 and LBX431 balers are equipped with a WALERSCHEID p.t.o. drive shaft. Both p.t.o. drive shafts consist of an 80° CV–joint at the front of the shaft, a center support bearing and standard U–joints.

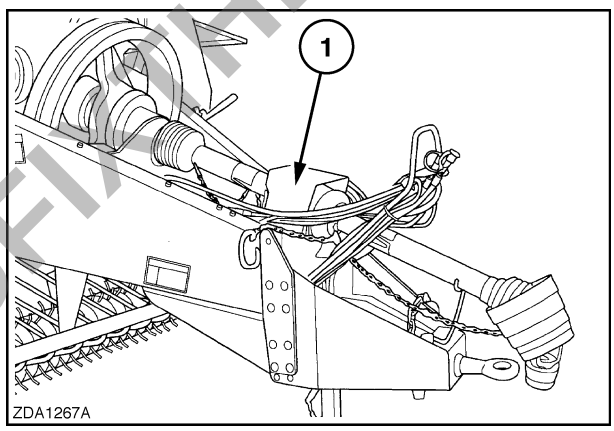
Depending on the hitch version, the type of p.t.o. drive shaft is a 3 joint p.t.o. drive line or a 4 joint p.t.o. drive line (refer to the LBX331–LBX431 Operator's Manual Section 2 paragraph headed "Attaching the baler to the tractor").

## BONDIOLI P.T.O. DRIVESHAFT

### Removal

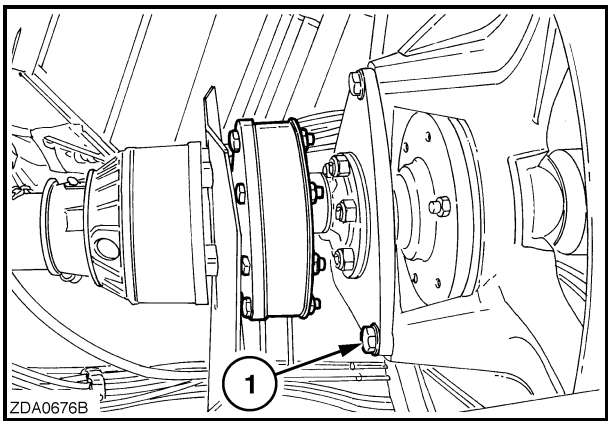
To remove the p.t.o. drive shaft, proceed as follows:

1. Remove shield 1 covering the center support bearing.
2. Remove the four bolts of the center support.




1

3. Remove three bolts 1.
4. Remove the protective anti–rotation chains attached to the baler.
5. Remove the p.t.o. driveshaft and torque limiter and place it on a workbench.




2

### Installation

1. Install the p.t.o. driveshaft and torque limiter at the flywheel with tree bolts 1.
2. Install the center support with four bolts as described in the Operator's Manual section 2, paragraph headed "Attaching the baler to the tractor".
3. Install the protective anti–rotation chains.

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# SECTION 55 – ELECTRICAL SYSTEM

## Chapter 3 – Troubleshooting

**CONTENT**


| Description | Page |
|---|---|
| Description of operation | 2 |
| Performance monitor – Basic functions | 2 |
| Performance monitor – Dealer diagnostics | 2 |
| Dealer diagnostics routine window | 2 |
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# SECTION 00 - GENERAL INFORMATION

**BOOK 1 - 87019911**

## Chapter 1 – General Information

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# SECTION 31 – IMPLEMENT POWER TAKE-OFF

**BOOK 1 - 87019911**

## Chapter 1 – P.T.O. Drive Shaft

**CONTENTS**


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|---|---|
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| Bondioli p.t.o. drive shaft | 2 |
| Walterscheid p.t.o. driveshaft | 6 |
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# SECTION 33 - BRAKES AND CONTROLS

**BOOK 1 - 87019911**

## Chapter 1 - Brakes and controls

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| Brake shoe - Removal | 2 |
| Brake control shaft - Rep. | 3 |
| Brake shoe - Installation | 4 |
| Air brake valve | 6 |
| Description of operation | 6 |
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# SECTION 35 - HYDRAULIC SYSTEMS

**BOOK 1 - 87019911**

## Chapter 1 - Bale Density

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| Description | Page |
|---|---|
| Technical data | 1 |
| Component sketch and location | 2 |
| Description and operation | 3 |
| Troubleshooting | 5 |
| Hydraulic cylinder - R./I. | 6 |
| Set of cylinder gaskets - Rep. | 6 |
| Proportional solenoid valve - R./I. | 8 |
| Hydraulic pump - R./I. | 9 |

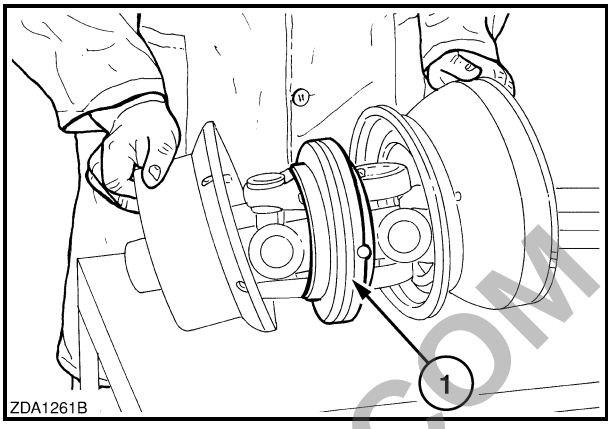

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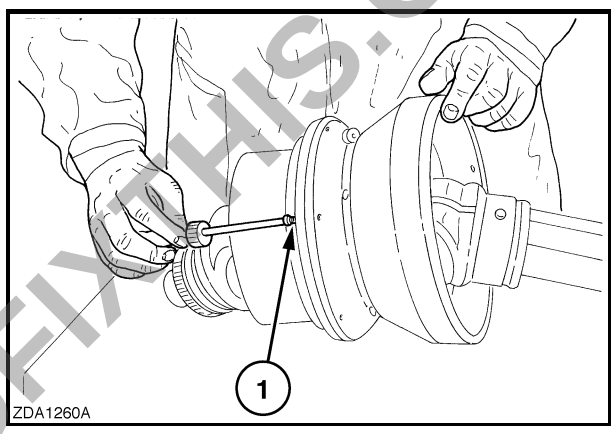
**Assembly**

1. Lubricate bearing surface 1 on the central body of the CV-joint.



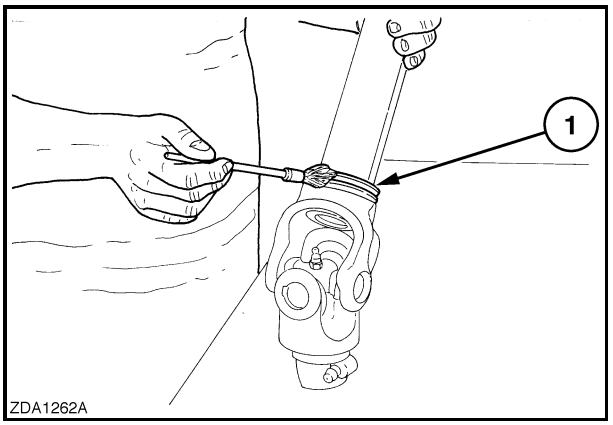

7

2. Align the two halves of the shield and secure with screws 1.



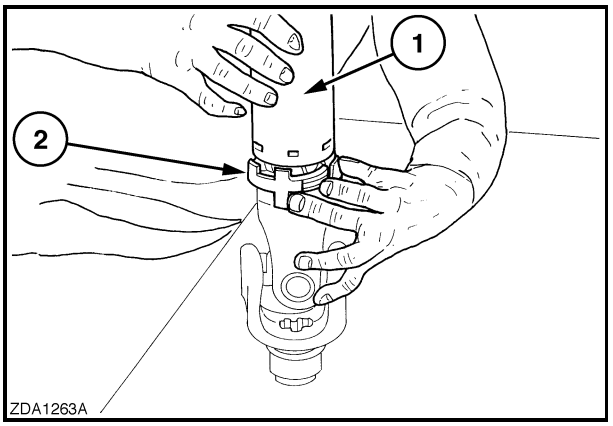

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3. Grease shield bearing groove 1 on inner yokes.




9

4. Slide on shield tube 1 and fit bearing tabs 2 into the slots.

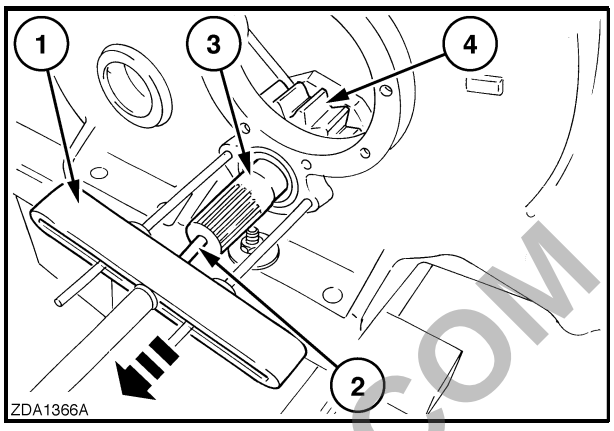



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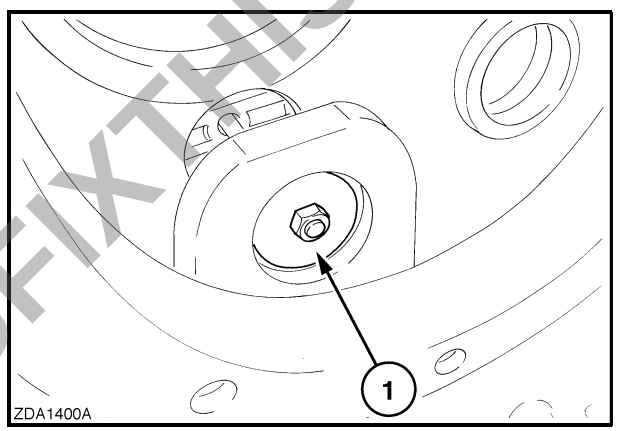
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6. Install puller 1 as shown.
7. Insert threaded rod 2 (M12) in shaft 3.
8. Pull out shaft 3 with bearing in the direction shown.
9. Remove gear 4.



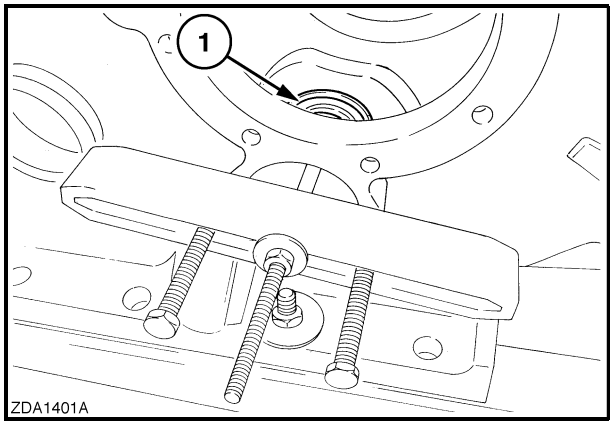

42

10. Install washer 1 (Diam. 70 mm [2 3/4”]) as shown.




43

11. Pull out bearing 1.

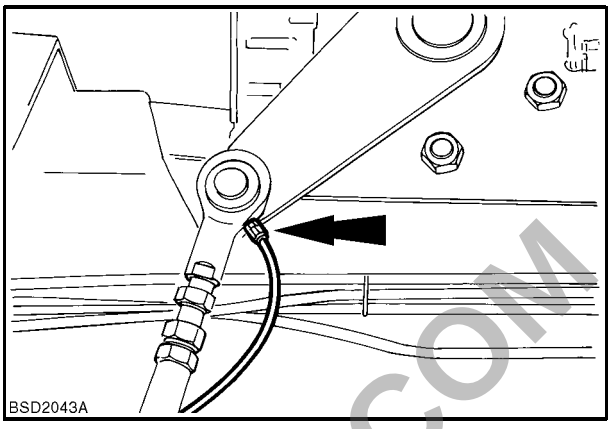



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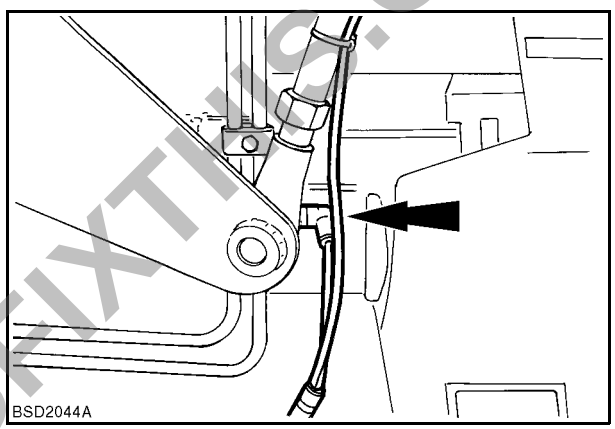
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- Needle yoke conrod (upper side)



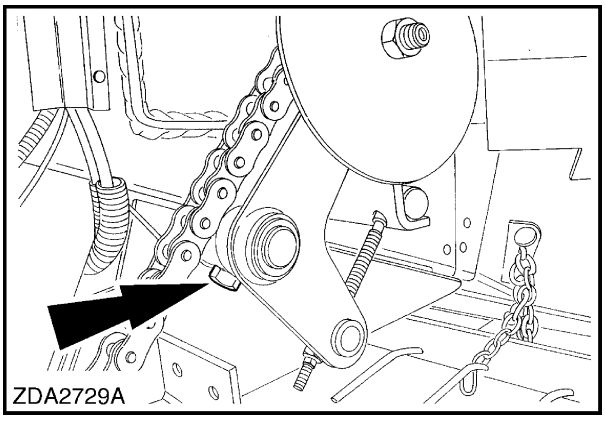

19

- Needle yoke conrod (lower side)



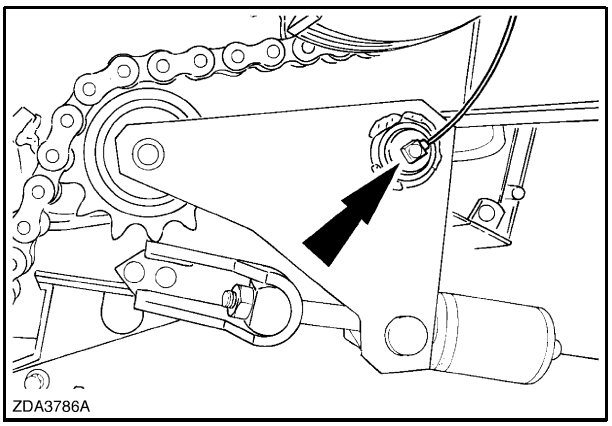

20

- Feeder drive chain tensioner
  LBX331S, LBX421S and LBX431S




21

  LBX331P

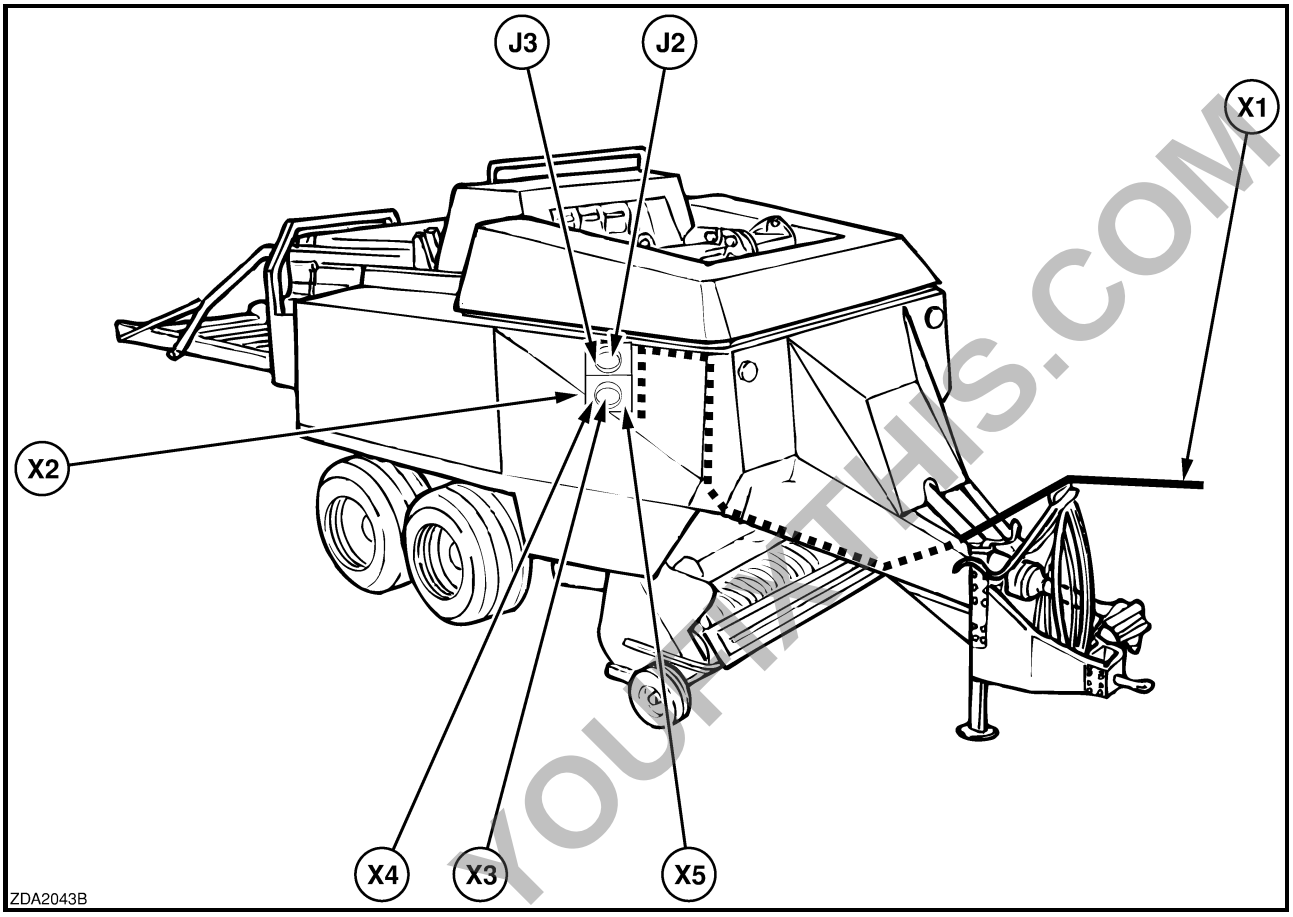



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**Connectors on wire loom from brake away connector to the central electronic boxes and on and inside the relays fuses box**




39

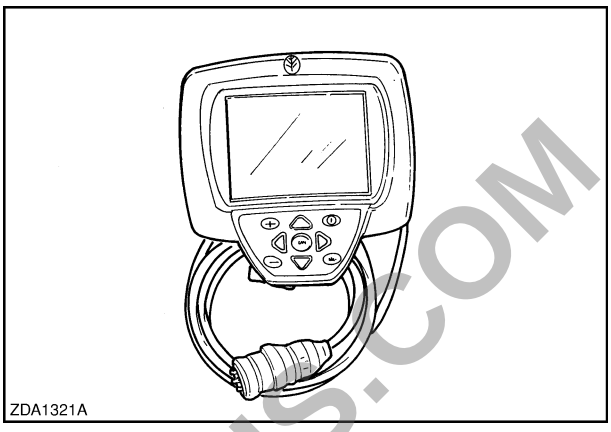
| | |
|---|---|
| **X1** | Can connector (brake away) at the tractor |
| **X2** | Update can connector at the central electronic boxes |
| **X3** | Connector at the central electronic boxes |
| **X4** | Connector at the central electronic boxes |
| **X5** | Connector for accessory 2 |
| **J2** | Connector to the controller |
| **J3** | Connector to the controller |

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### PERFORMANCE MONITOR

If the monitor gets damaged, replace the complete monitor.

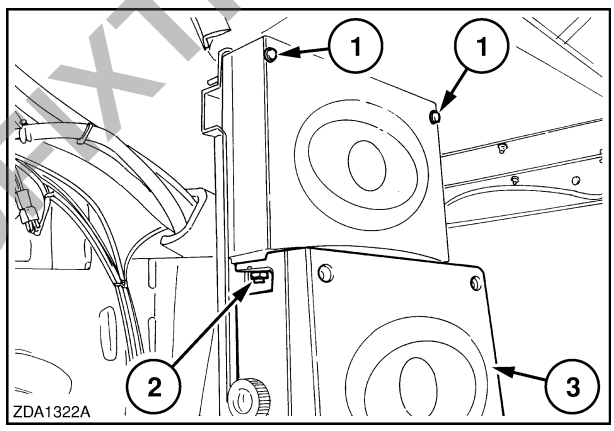



1

### BALER CONTROLLER

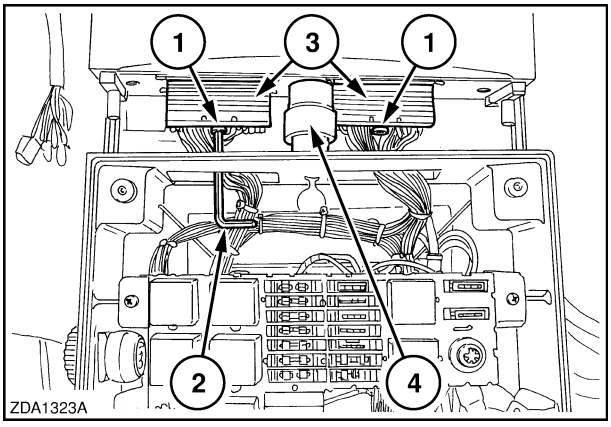
#### Removal

1. Ensure the tractor battery switch is turned off.
2. Remove bolts 1, and two nuts 2, one on both sides of the baler controller.
   Or where fitted, remove the protective rain cover by breaking the blind rivets with a chisel.
3. Remove cover 3 from the fuses/relays box.




2

4. Carefully lift the baler controller +/- 50mm to ease access to screws 1. Place part 4 (height approx. 50mm) between the controller and the fuses/relays box.
5. Loosen Allen screws 1 with key 2 and detach both connectors 3.
6. Remove the baler controller.




3

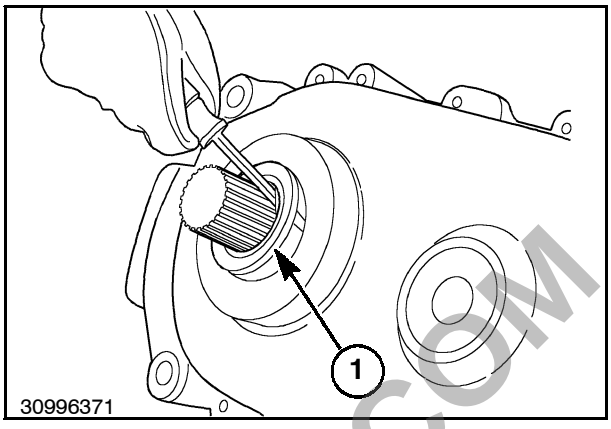
#### Installation

1. Install connectors 3 to the baler controller.
2. Tighten Allen screws 1.
3. Install the baler controller on top of the fuses/relays box and install nuts 2 and bolts 1 (Fig. 2).
4. Install cover 3 (Fig. 2) of the fuses/relays box.

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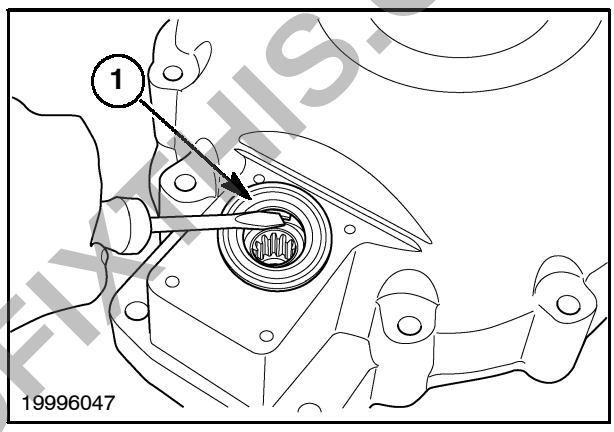
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5. Remove and discard the drive shaft oil seal, 1, as shown.




25

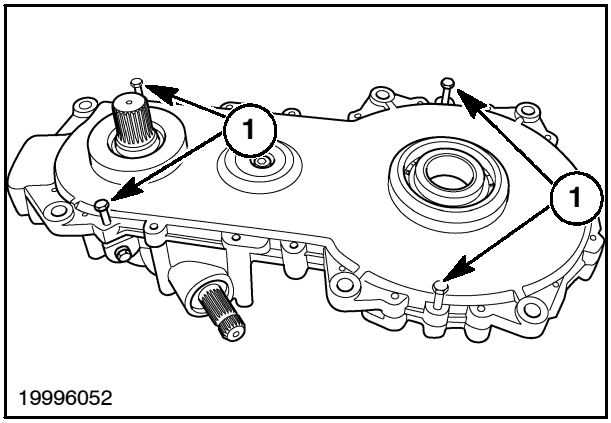
6. Remove and discard the stuffer pump drive oil seal, 1.




26

7. Separate the two housing halves, by inserting four bolts, 1, into the M10 extraction holes as shown.

***NOTE:*** *There are two dowel pins, one on each side of the gearbox.*

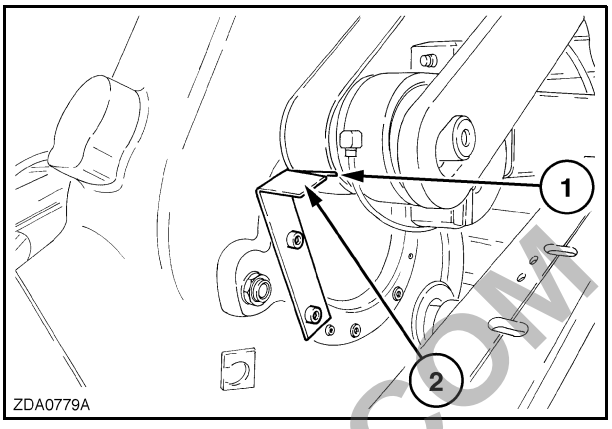



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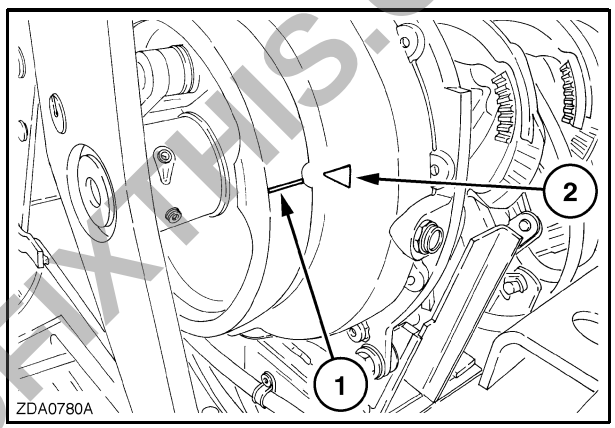
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12. Check the needles to plunger timing. Rotate the flywheel manually until the tying cycle is complete, continue to rotate until the notch, 1, in the plunger crank arm is in line with the plate, 2. Apply the flywheel brake.




56

13. The notch, 1, in the knotter clutch must align with the timing mark, 2, on the gearbox.



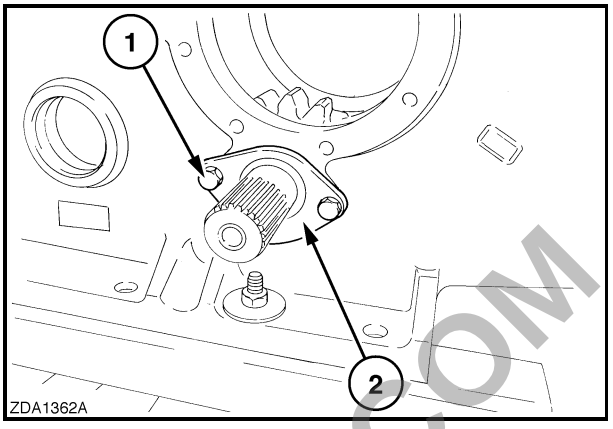

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14. Check the maximum needle penetration. Rotate the flywheel by hand until the needles are at maximum penetration. Lock the flywheel.

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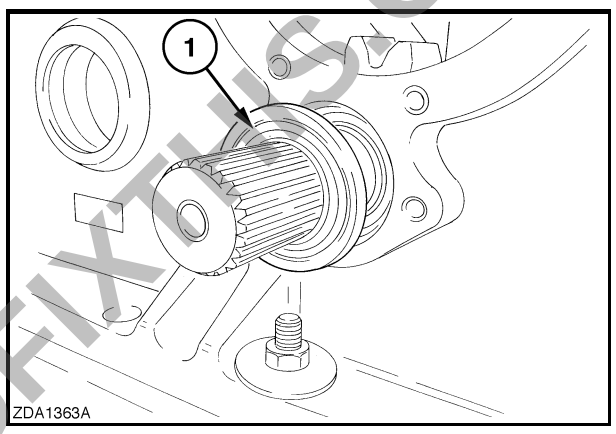
1. Remove bolts and washers 1.
2. Remove cover 2.




38

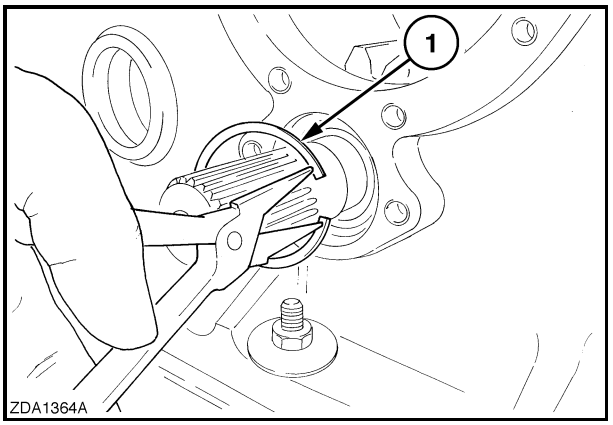
3. Remove seal 1.

***NOTE:*** *Seal 1 will be damaged when it is removed.*



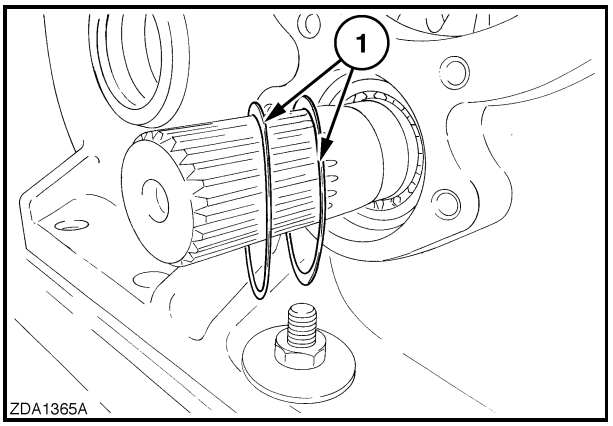

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4. Remove circlip 1.




40

5. Remove shimpac 1.

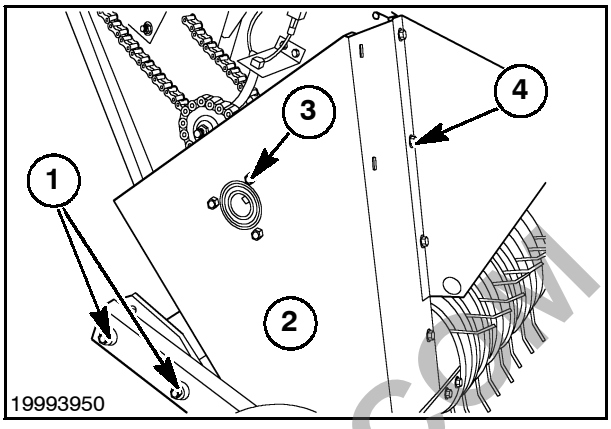



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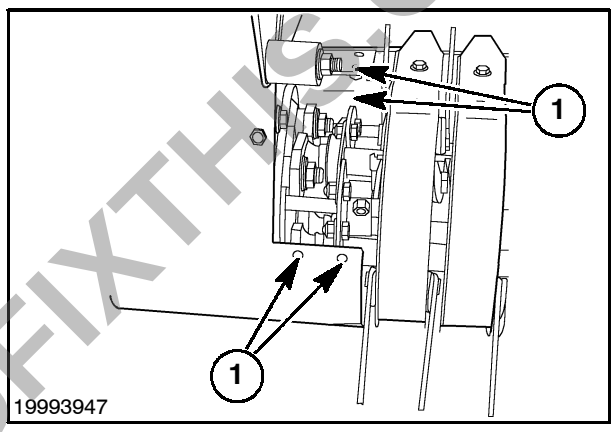
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3. Take out the two bolts, 1, and remove the gauge wheel.
4. Remove the cover, 2, over the chain drives. This requires removing the flangette bolts at, 3 and the bolts , 4, on the front and underneath.



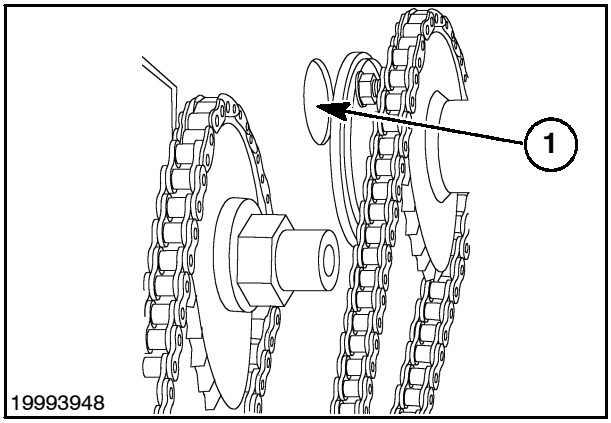

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5. Remove the four bolts, 1, holding the right end guard in position.



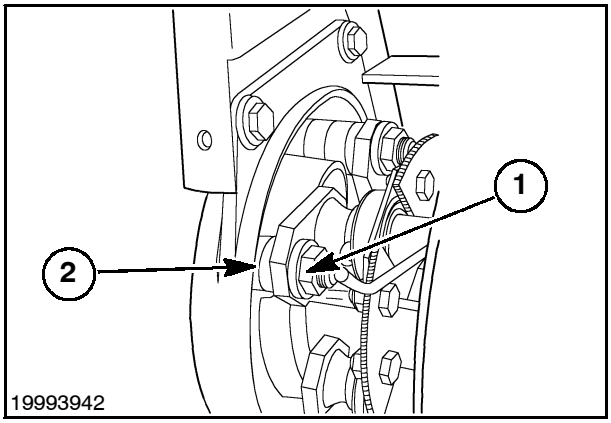

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6. Rotate the pickup reel until the failed cam follower bearing aligns with the hole, 1, in the cam and the pickup end.




95

7. Loosen the nut, 1, on the cam follower bearing, 2. This may require holding the bearing with an 8 mm (5/16″) Allen wrench.



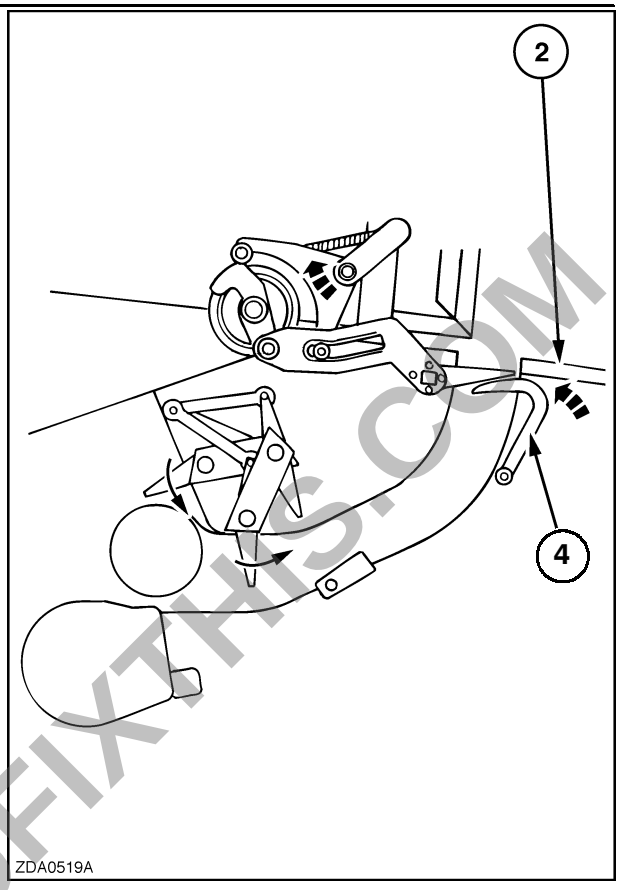

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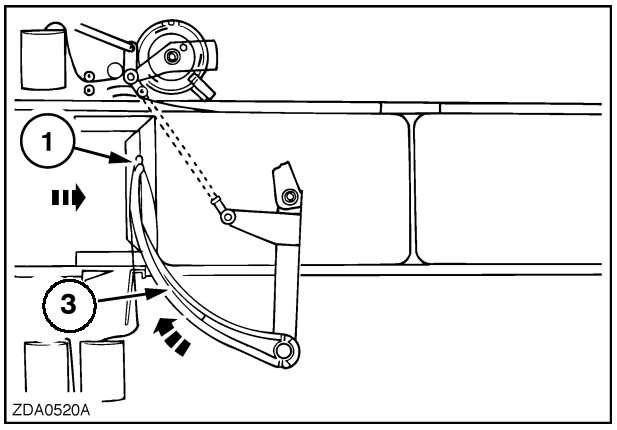
Crop holding fingers, 4, return to their closed position as soon as the crop flake has been lifted into bale chamber, 2.

The plunger moves the charge flake back and compresses it against the bale to be formed in the bale chamber. Both bale chamber side doors and top door are hinged and can move under the action of two density cylinders. This is to modify the outlet section of the bale chamber and thus to control the density of the bales produced. An electronic system measures the load on the plunger when pushing material rearwards. The electronic system will control the hydraulic bale density system until the load measured is the same as the density value pre-set by the operator. That value must be chosen in relation to the nature and to the moisture content of the crop to be baled, as well as the bale density required.




4

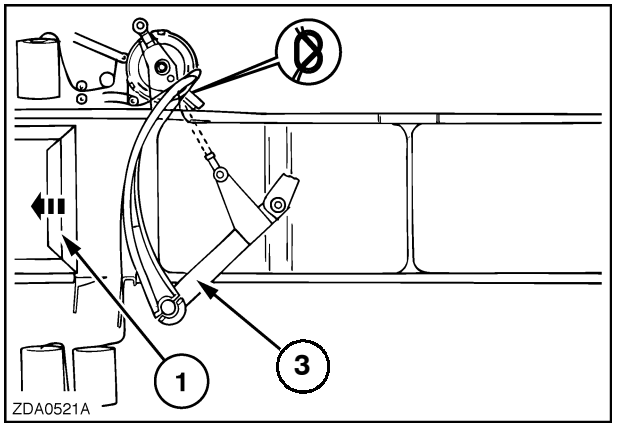
While the bale travels rearward in the bale chamber, it activates bale length metering wheel. When the desired bale length is reached, a mechanism will trip knotters, and needles, 3, which are timed with baler plunger, 1.




5

At each side of the machine, twine balls are provided. Twine will be fed to the tucker twine arms, located above the bale chamber, and to needles, 3, located underneath the bale chamber.

During the compression stroke of plunger, 1, needles, 3, will raise towards knotters, bringing along the lower twine (Figure 5).

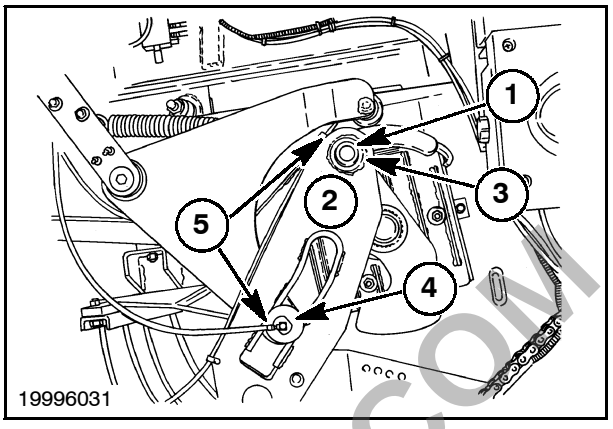



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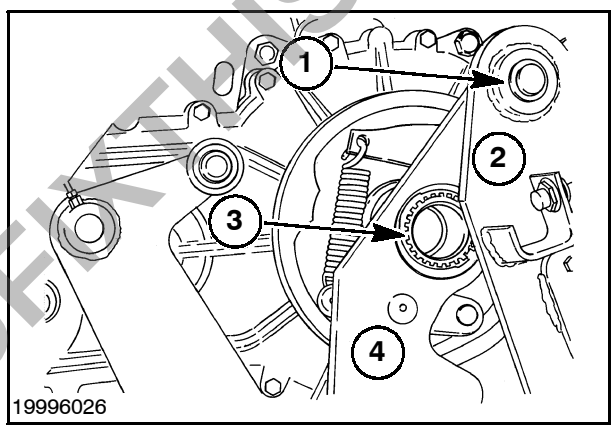
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6. Re-install inner spacer to the upper pin linkage, 1, and re-install the stuffer arm, 2.
7. Re-install the outer spacer and apply the snap ring, 3.
8. Re-install the bolt to the rear of the stuffer arm bearing, 4.
9. Reattach oil lines, 5, and wire clamps.



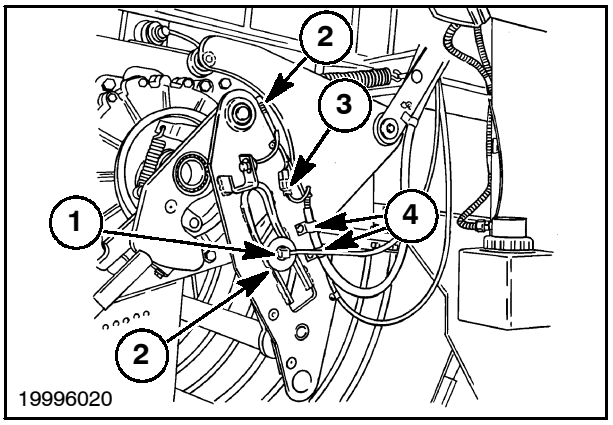

125

10. On the right side of the baler, install the clutch assembly, 4. Align with the mark made at removal.
11. Apply snap ring, 3.
12. Install the stuffer arm, 2, and apply shims and snap ring, 1.




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13. Install the nut to the rear of the stuffer arm bearing, 1.
14. Reattach oil lines, 2, sensor wire, 3, and the wire clamps, 4.

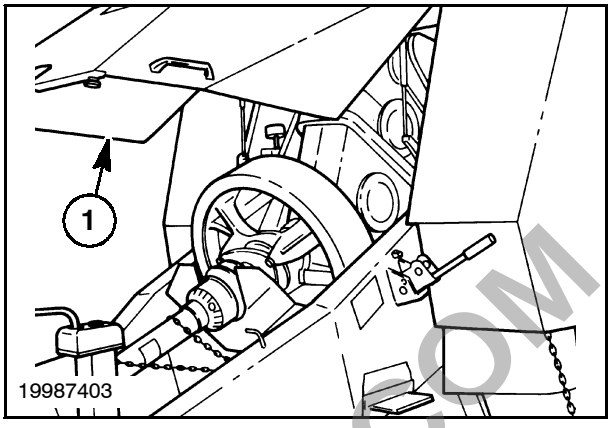



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4. Open the front shield, 1,on the baler.

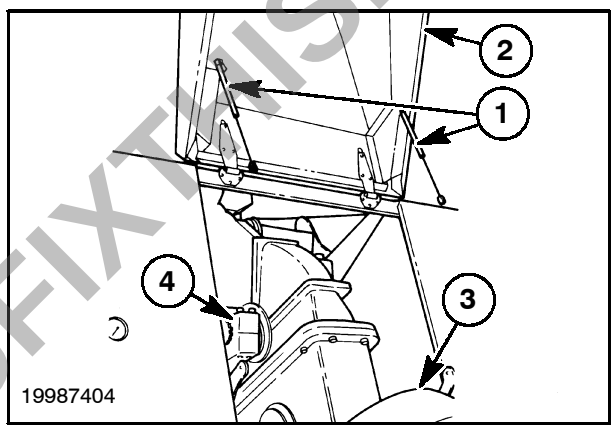



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5. Pop the spring over the ball on the shock absorber, 1, with a screw driver. Tie the front shield, 2, up out of the way. Do not push it back over center or the sheet metal at the hinges will bend.
6. Rotate the flywheel, 3, until the connecting rod bearing, 4, is in the most accessible position. Lock the flywheel.

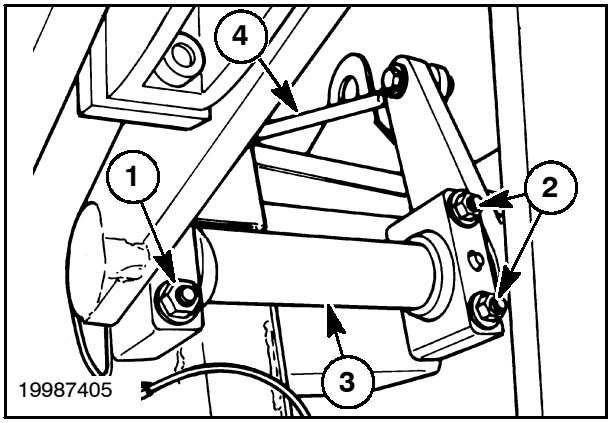
***NOTE:*** *Follow steps 7, 8 and 9; skip step 10 to remove the left bearing. To remove the right bearing skip steps 7, 8 and 9.*

***NOTE:*** *If both front connecting rod bearings are to be replaced, the plunger must be held in location.*




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7. To remove the bearing on the left side, take the rod, 4, off at the front end.
8. The needle safety linkage, 3, must be moved out of the way. Take out the bolts, 1, in the right pivot block. Loosen the bolts, 2, in the left pivot block.

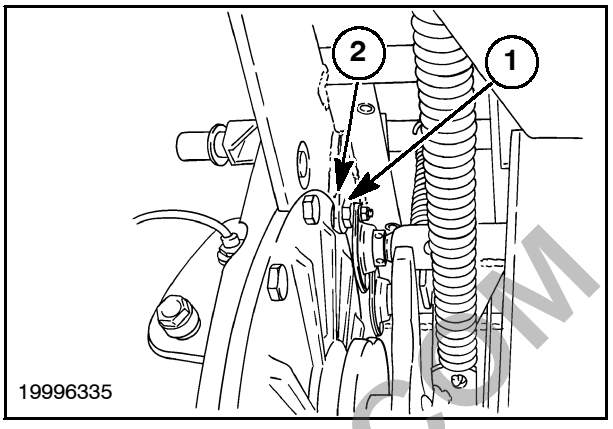



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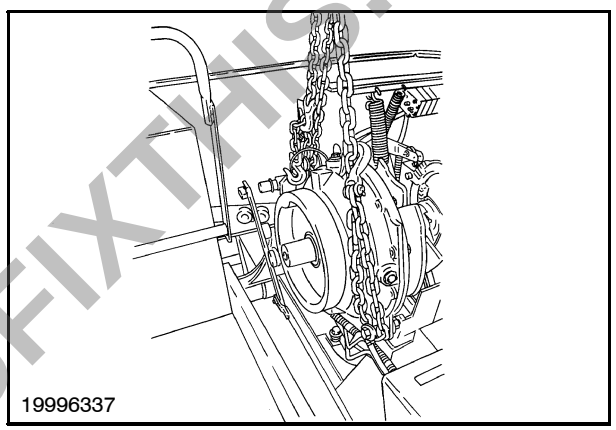
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20. One of the gearbox housing bolts, 1, fastens to a tab, 2, inside the knotter frame. Remove the bolt.




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21. Slide the gearbox partially off the knotter shaft. Install two bolts with washers at both ends through two of the gearbox mounting bolt holes. Attach chains to the two bolts and support the gearbox with a hoist as shown. Adjust the length of the chains to position the input shaft with clearance. Slide the gearbox off the shaft. Make sure the washer on the backside of the gearbox stays on the shaft.

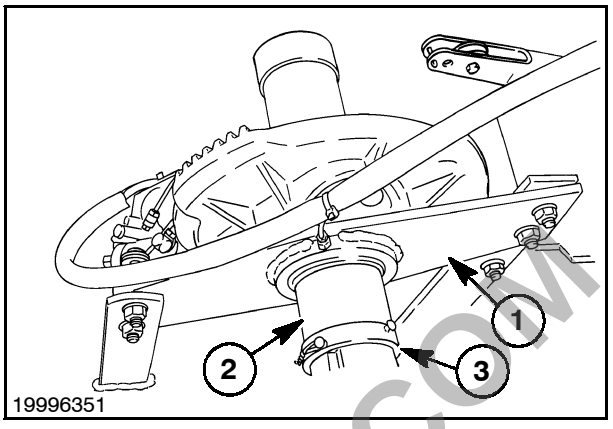



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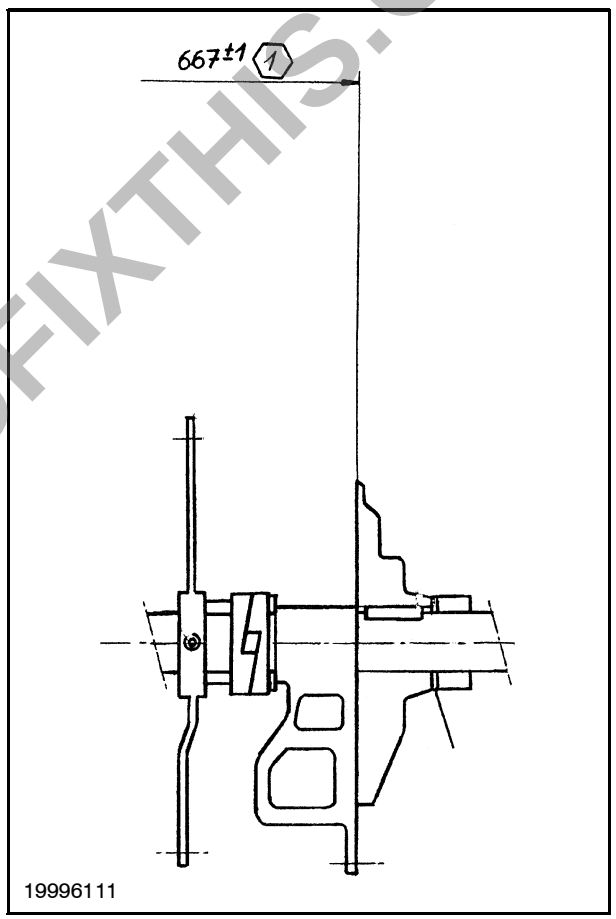
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19. Install the center support, 1. Follow this with a long spacer, 2, an expanding ring set, 3, and then a shim set, 4.




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20. Install the n°3 knotter, 5, pinion clearance shims and n°3 cam gear, 6, with key, 7.
21. Follow steps 8 and 9 again to set the pinion clearance and stacking dimension for the third knotter on the LBX421, LBX431.
22. Install a shim set, 8, and a narrow spacer, 9.
23. On either size baler add the next shim set (n°3 on a LBX331 or n°4 on aLBX421, LBX431).
24. Install the next knotter, pinion clearance shims and next cam gear with key.




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25. Follow steps 8 and 9 again to set the pinion clearance and stacking dimension for the third or forth knotter.
26. Install a shim set, a narrow spacer followed by another shim set.
27. Install the last knotter, pinion clearance shims and cam gear.
28. Follow steps 8 and 9 again to set the pinion clearance and stacking dimension for the last knotter.

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